

Mentoring America's Future Scientists and Engineers



Argonne's Vision

How can Argonne enrich science education and help prepare the next generation of scientists and engineers in the United States? The foundation for the success of research participation at Argonne National Laboratory is the individual scientist/engineer who provides guidance and supervision of the students. The overall purpose of this mentorship experience is to provide participants with opportunities to learn as much as possible about a specific area of scientific research or technology. The mentors provide needed direction and overall guidance to ensure that the students have meaningful and productive experiences while being involved in real-life research assignments.



Middle-school students perform experiments at an instructional laboratory.

Approach

Argonne has maintained extremely productive and wide-ranging interactions with the academic community throughout its existence. Activities range from programs that support science education and community outreach at the K-12 level, to mutually beneficial research partnerships between university faculty and Argonne research staff in virtually all of the Laboratory's scientific and technical areas.

Programs at the university level provide opportunities for research participation for undergraduates and faculty, as well as for thesis research. Argonne participates in graduate programs involving strategic areas of interest to the U.S. Department of Energy (DOE), such as the Neutron X-Ray Scattering School and the Nuclear Nonproliferation Graduate Program. The quality and value of these programs attract applicants from throughout the country. Overall, more than 375 undergraduates, 140 graduate students, and 90 visiting faculty held educational appointments as research participants this year.

Accomplishments

Argonne's collaborations with academia and students have resulted in numerous programs and activities, including:

- The National Neutron and X-Ray Scattering School for graduate students.
- Summer training programs for teachers from regional schools.
- An instructional van that brings modern scientific equipment to 47,000 students in Chicago-area classrooms annually.
- Visits by more than 3,000 pre-college students to the Argonne Information Center each year.
- The *Science Careers in Search of Women* Conference, attended by over 300 high-school girls each year for the last 13 years.
- The annual Argonne Rube Goldberg Machine Contest.
- A computer network that connects and provides dial-up access to the Internet for 5,000 teachers throughout Illinois Region I.
- A nationwide electronic bulletin board system for teachers and students at all levels, allowing them to "Ask a Scientist" questions about any scientific topic. The site has logged more than 1.2 million hits per month.



Graduate students at the Neutron and X-Ray Scattering School get hands-on experience with state-of-the-art instrumentation.

In these ways, Argonne's educational activities and programs help to strengthen the scientific workforce for America's future.



High-school participants in Argonne's annual Rube Goldberg Machine Contest.



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Argonne National Laboratory is operated by The University of Chicago for The U.S. Department of Energy.